

ANNALS OF PALLIATIVE MEDICINE

Peer Review File

Article Information: <http://dx.doi.org/10.21037/apm-20-608>

Review Comments

This study aimed to compare the scoring systems which were used to predict short-term outcomes for HBV-ACLF patients. This is a retrospective study and the design of this study is rigorous, but not novel. I have a few questions:

1. In **Abstract** section, “The survival were associated with lower ALBI score, MELD score and CLIF-C 32ACLF score than death,...Decreased MELD score and CLIF-C ACLF score were associated with better overall survival”, You can express overall survival in terms of detailed numerical result. We recommend that the results of the derivation cohort and validation cohort can be listed, respectively.

Response: Thank you for your comments. We have added the detailed numerical results and listed results of the derivation and validation cohort respectively.

Changes in the text: In the derivation cohort, elevated ALBI score was related to worse prognosis (30-day mortality: HR=3.452; 90-day mortality: HR=3.822), increased MELD score was associated with worse overall survival (30-day mortality: HR=1.073; 90-day mortality: HR=1.082), and increased CLIF-C ACLF score was associated with worse overall survival (30-day mortality: HR=1.061; 90-day mortality: HR=1.065). The multivariate analyses identified the ALBI score, MELD score and CLIF-C ACLF score as independent prognostic predictors. The results of validation cohort validated these findings. The revision were marked in red sign.

2. In page 6 lines 130-131, “Finally, 529 patients were included in the present study. They were divided into derivation and validation cohort at a ratio of 3:1.”, in which way were 529 people divided into two cohorts? Random? What software?

Response: They were randomly divided into derivation and validation cohort at a ratio of 3:1 by using SPSS software.

Changes in the text: A total of 529 patients diagnosed as HBV-ACLF were retrospectively analyzed and randomly divided, at a ratio of 3:1, into derivation cohort (n=397) and validation cohort (n=132). (Abstract section) Finally, 529

ANNALS OF PALLIATIVE MEDICINE

patients were included in the present study. They were randomly divided into derivation and validation cohort at a ratio of 3:1. (Page 6)

3. In page 6 lines 146-147, “The ALBI score showed larger AUC than the MELD score and CLIF-C ACLF score (AUCs: 0.682 versus 0.659, 0.673) (Supplementary figure 2a).”, which statistical method is used for area comparison? Z test or other Statistical methods/ software?

Response: Thank you for your comments. Z-test was used to compare the AUCs between these three models.

Changes in the text: The Z-test was used to compare the area under the receiver operating characteristic (AUC). (Method section)

4. In page 5 lines 116-117, “By setting 90-day mortality as endpoint, cut-off value was calculated using receiver operating characteristic (ROC) as Youden index attained highest value”, but In Supplementary table 1, the Cut-off values of ALBI score, MELD score, and CLIF-C ACLF score in 30-day mortality were the same as the Cut-off values of that in 90-day mortality. Do you take the fixed value of cutoff values?

Response: Thank you for your comments. The previously used cut-off value for ALBI score (-1.39) was used in this study. Since there were no uniform cut-off values for MELD score and CLIF-C ACLF score, they were calculated using receiver operating characteristic (ROC) as Youden index attained highest value, with 90-day mortality as endpoint. Thereafter, the obtained cut-off values were used as the discriminant for 30-day mortality.

Changes in the text: The most used cut-off value for ALBI score was used in this study(1). The optimal thresholds of MELD and CLIF-C ACLF score were identified by application of the receiver operating characteristics (ROC) curve using 90-day mortality as the discriminant(2).

5. In page 8 lines 191-3 “The ALBI score showed larger AUC than MELD score and CLIF-C ACLF score in predicting 30-day mortality. This would be helpful for clinical treatment strategies decision and selection of appropriate candidate for liver transplantation.”, in Supplementary table 1, the Specificity of ALBI score was lowest, why?

Response: The cut-off value for ALBI score was obtained from previous studies. As summarized in supplementary table 1, the sensitivity of ALBI score was 96.2% and 92.5% for 30-day mortality and 90-day mortality, respectively. As a result, the specificity of ALBI score was low. We considered the reason was insufficient patient samples and the cut-off value setting. Nonetheless, application of current

ANNALS OF PALLIATIVE MEDICINE

cut-off value for ALBI score could stratify HBV-CALF patients into groups with different survival outcomes. Future study was in need to investigate a more appropriate cut-off value for ALBI score in evaluating HBV-CALF patients.

6. In page 8 lines 186-93, this paragraph should be moved to the first paragraph of the discussion section. “In the present study, we retrospectively analyzed 397 HBV-ACLF patients, and compared the accuracy of the MELD score and ALBI grade”, wasn't there a CLIF-C ACLF score?

Response: Thank you for your precious comments. We have revised this sentence and moved this paragraph to the first paragraph of “Discussion” section.

Changes in the text: The revision was marked in red sign in the “Discussion” section.

7. In page 4 line 97, “The flow diagram was shown in figure 1”, Not figure1, Supplementary figure 1?

Response: Thank you for pointing this out. We have corrected it in the revised manuscript.

Changes in the text: The flow diagram was shown in Supplementary figure 1. (Page 6)

8. In page 7 lines 161-163, “Among 132 patients, 37 (28.0%) were associated with ALBI grade 2, 93 (70.5%) were associated with MELD score no more than 27.83 and 98 (74.2%) with low CLIF-C ACLF score.”, It's not clear enough.

Response: Thank you for comment. We have revised the sentence.

Changes in the text: 132 patients were included in validation cohort. According to the cut-off values, 37 (28.0%) were classified into ALBI grade 2 group, 93 (70.5%) were classified into low MELD score group while 98 (74.2%) were classified into low CLIF-C ACLF score group.